

CLAIMS:

1. A ring sealing assembly adapted for use in an indirectly heated rotary tubular kiln having a rotatable tube disposed in a heating tunnel, said 5 ring sealing assembly comprising:

a plurality of sealing segments positioned about said outer surface of said tube, said sealing segments positioned such that at least one of said sealing segment overlaps an adjacent sealing segment, said plurality of sealing segments comprising a heat-resistant, lightweight sealing material; 10 and

at least one application pressure element positioned on said sealing segments to thereby provide a radial application pressure upon, and thereby secure, said sealing segments to said tube.

15 2. The ring sealing assembly according to claim 1, wherein said sealing segment material has a temperature stability greater than 280°C.

20 3. The ring sealing assembly according to claim 1, wherein said sealing segment material has a temperature stability greater than 280° in an oxidizing atmosphere.

4. The ring sealing assembly according to claim 1, wherein said sealing segments comprise a high temperature-resistant felt.

25 5. The ring sealing assembly of claim 4 wherein said sealing segments comprise carbon fibers.

30 6. The ring assembly according to claim 1, wherein the application pressure element is a closed ring, which is disposed on said sealing segments on their side opposite from said rotating tube.

7. The ring sealing assembly according to claim 6, wherein said ring comprises a plurality of flat band-like sections, which are connected with one another, to form a tightening ring.

8. The ring sealing assembly of claim 7 wherein said ring further comprises at least one spring serving to connect said band-like sections.

5 9. The ring sealing assembly according to claim 1, wherein said sealing segments comprise a material that exerts a polishing effect on a sealing surface of said rotating tube.

10 10. The ring sealing assembly according to claim 1, wherein said application pressure is less than 300 kN.

11. The ring sealing assembly according to claim 1, further comprising a cover or guide disposed on said sealing ring, said cover or guide defining a plurality of slits and/or recesses.

15 12. The ring sealing assembly according to claim 1, wherein said sealing material has a density  $\leq 1.5 \text{ g/cm}^3$ .

20 13. A ring sealing assembly adapted for use in an indirectly heated rotary tubular kiln and positioned between a heating tunnel and a rotating tube of said kiln, said ring sealing assembly comprising:

a plurality of overlapping sealing segments that, upon application of a radial pressure against said sealing segments, form a sealing ring on said tube; and

25 an application pressure element disposed on a side of said plurality of overlapping sealing segments opposite from said rotating tube, wherein said application pressure element exerts a radial pressure on said sealing segments.

30 14. The ring sealing assembly of claim 13 wherein said application pressure element elastically encompasses said sealing segments.

15. The ring sealing assembly according to claim 13, wherein said application pressure element comprises a plurality of flat band-like sections, which are connected with one another.

5 16. The ring sealing assembly of claim 15 wherein said plurality of band-like sections are connected with one another by springs.

10 17. The ring assembly according to claim 13, wherein said sealing segments are formed from a material which exerts a polishing effect on the sealing surface of said rotating tube.

18. The ring sealing assembly according to claim 13, wherein said radial pressure is less than 300 kN.

15 19. A ring sealing assembly for use in a rotary tubular kiln, said sealing assembly comprising:

a plurality of overlapping sealing segments adapted to be positioned about an outer surface of a rotatable tube of said kiln to thereby form a sealing ring;

20 an application pressure element adapted to apply a radial pressure on said sealing ring; and

a cover disposed on said sealing ring, said cover defining a plurality of apertures adapted to facilitate the removal of debris from said sealing assembly.